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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/666,924
Filing Date: September 19, 2003
Appellant(s): EVERTS ET AL.

MAILED

OCT 13 2005

Group 3700

Benjamin B. Cotton
For Appellants

EXAMINER'S ANSWER

This is in response to the appeal brief filed 9/12/05 appealing from the Office action mailed 4/14/05.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

DE3335962 A1	KOVACS	5-1985
JP61-39416	TAKADA et al	3-1986

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kovacs (DE 3336962 A1) in view of Takada et al (JP 61-39416).

Kovacs proposes to use a four-cycle engine for a chain saw, (see page 2, paragraph 1 of translation). There are no figures and the details of the lubrication system and valve drive are not set forth. Takada et al disclose a four-cycle engine comprising a cam 17, a valve cover 15 on the cylinder head, a splasher 23 that directs lubricant to the recited moving parts of the engine via oil passages 24,25. Takada et al disclose that an advantage of the invention is a lubrication apparatus, which can lubricate the rocker arm chamber in a reliable and efficient manner with a simple and compact structure. Because this is important for a portable operator carried power tool, one of ordinary skill in the art would have combined the engine, including the valve drive, of Takada with the tool of Kovacs. While Kovacs recites "chain saws, appliances, pump, etc.", one of ordinary skill in the art would be led to apply a four-stroke engine to any previous two-stroke application. Hand-held portable tools like chain saws, blowers, line trimmers, vacuums, inherently have a frame, a handle and an implement.

(10) Response to Argument

The appellants argue that the examiner failed to establish a prima facie case of obviousness. Combining the references will destroy the references. The examiner fails to provide a teaching for making the combination. The combination would result in something that

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eliminates required features of one or both of the references; in particular, Kovacs has two inlet openings in the cylinder head and the second opening being in the cylinder center whereas Takada et al require the valves be provided above the cylinder head.

The examiner contends that the teaching for making the combination is to use the lubrication system of Takada et al in Kovacs because of the advantages disclosed by Takada et al and that Kovacs is silent as to the construction of any lubrication system. Secondly, Takada et al also have the inlet and outlet in the cylinder head and, as seen in figure 1, the valves are also in the cylinder head. While Takada et al have merely been cited for its lubrication system and valve drive (it also being lubricated by splashed oil), one of ordinary skill in the art could easily drive two inlet valves and it would not destroy the Takada et al reference.

The appellants argue that reliance on an unclaimed feature does not provide motivation to combine the references. The lubrication system is not a required element of claim 8 and to read such a limitation into the claim is inappropriate and makes Takada et al improperly applied. Furthermore, the examiner provides no explanation of how the combination of the lubrication system in Takada et al can be combined with Kovacs to teach the portable power tool having a four-cycle engine. The examiner had previously allowed the claims after considering the references and must maintain that position.

The examiner contends that the motivation to combine need only come from the secondary reference, regardless whether that feature is found in the pending claims. The lubrication system including the lubricated valve drives system that is claimed. As to how to combine the references, one of ordinary skill in the art would have merely incorporated the lubrication system in the engine of Kovacs. While the examiner had previously allowed the

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claims, upon further reconsideration the claims are deemed obvious. The claims were never allowed after having made a rejection based on Kovacs and Takada et al.

The appellants argue there is no motivation to combine because Kovacs already includes a lubrication system. Kovacs recognizes that a lubrication system located external from the combustion cylinder is necessary in order to allow for cleaner combustion and fuel savings. Moreover, there is no explanation of how the combination can be combined.

The examiner contends that all four-stroke engines have lubrication system external to the combustion cylinder and Kovacs merely admits to such a necessity without showing any details of the lubrication system. Hence, Takada et al are cited because details of the lubrication system are set forth.

The appellants argue that the conclusion regarding miniaturizing the combination of Kovacs and Takada et al are improper and unsupported. The assertion that miniaturisation was not done prior to appellants' invention because of expense, and not technology, is not supported and therefore the examiner's conclusory statements by themselves are insufficient to amount to "evidence" of a motivation to combine references. Further, there is no showing that miniaturization will necessarily result in a properly working engine for use on a portable hand-held power tool.

The examiner contends that change of size is a well settled matter of design choice (In re Rose, 105 USPQ 237). There is no reason that one of ordinary skill would not expect a merely smaller engine to work. Lastly, the limitations of "hand-held", "portable", and "lightweight" are somewhat subjective such that a very strong man would be able to carry a power tool with an unminiaturized four-stroke engine.

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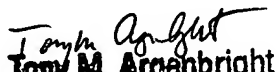
For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Noah Kamen


Conferees:



Tony M. Argenbright
Primary Examiner
Art Unit 3747



Henry C. Yuen
Supervisory Patent Examiner
Group 3700



Willis R. Wolfe
Primary Examiner
Art Unit 3747



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combination, and destroying the references were not deemed persuasive as already set forth in the final rejection.¹

I. REAL PARTY IN INTEREST

The real party in interest is the assignee of the present patent application, MTD Southwest, Inc.

Bank One, N.A. has a security interest assigned to it by MTD Southwest, Inc.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

The status of the claims is as follows:

Claims 1-7 have been cancelled.

Claims 8-19 are pending in the present application.

Claims 8-19 are finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Kovacs (DE 3335962) in view of Takada et al. (JP 61-39416).

IV. STATUS OF AMENDMENTS

All amendments have been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Applicants disclose and claim the first hand-held, power tool utilizing a four-cycle engine adapted to be carried by an operator in use. Before Applicants' invention, operator-carried, hand-held power tools existed, but they used electric motors or two stroke engines, not four cycle engines as claimed. Independent

¹ On July 13, 2005, Appellants filed a Notice of Appeal. Since the Notice of Appeal was filed within three months of the mailing date of the Final Office Action and the present Appeal Brief is being filed within two months of the filing of the Notice of Appeal, the present Appeal Brief is timely filed.

Claims 8 and 14 are directed to a hand-held, portable power tool having a lightweight, four-cycle engine. An exemplary embodiment of a hand-held, portable power tool is shown in the application, attached hereto at Tab A, in Figure 1 and described at page 5 line 26 through page 6, line 10. The portable power tool includes a frame (22) to which a handle (24, 26) is operatively attached thereto. A rotary-driven implement (32) cooperates with the frame (22). The handle allows a user to grasp the frame and control the movement of the implement. The implement is disposed at one end of the frame such that the weight of the implement is balanced by an engine (30) disposed at the opposing end of the frame.

The key to Applicants' invention is the use of a novel four-cycle engine instead of the conventionally used two-cycle engine. Before Applicants' invention, a four-cycle engine had never been used for a hand-held, operator-carried power tool. Indeed, it was impossible because four-cycle engines weighed in excess of 40 pounds. Judith Anne Gunther, *The Little Engine that Could*, Popular Science, March 1993, at 90, 92.² Such an engine could never be used in a hand-held, operator-carried application. Applicants' engine was uniquely designed so that it was compact and light enough to be used on an operator-carried, hand-held power tool. It also included a lubrication system that enabled the tool to be used in a wide variety of orientations.

The engine is lightweight and compact as a result of the materials used, and the engineered design and architecture. The engine design and lubrication system is shown in Figures 2-10 and fully described in the specification beginning on page 5, line 11 through page 10, line 22.

² This article was first made of record in an Information Disclosure Statement with the originally-filed application on September 19, 2003 as reference A48. Because the Applicants had received no indication that the Examiner had considered this reference prior to the filing of the Request for Continued Examination, this article was re-submitted in an Information Disclosure Statement with the Request for Continued Examination on November 12, 2004 as reference B56. The relevant portions of this article were then explained to the Examiner by the Applicants in the Amendment filed on March 28, 2005 and in the Response to Office Action filed June 13, 2005.

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether Claims 8-19 are obvious under 35 U.S.C. § 103(a) with respect to Kovacs in view of Takada et al.

VII. ARGUMENT

A. Claims 8-19 are not obvious under 35 U.S.C. § 103(a) with respect to Kovacs in view of Takada et al.

Claims 8-19 were finally rejected in the Final Office Action of April 14, 2005 under 35 U.S.C. § 103(a) as being obvious with respect to Kovacs (DE 3335962), attached hereto at Tab B, in view of Takada et al. (JP 61-39416), attached hereto at Tab C.

1. Examiner Failed to Establish a *Prima Facie* Case of Obviousness

During prosecution of a patent application, the Examiner has the initial burden of establishing a *prima facie* case of obviousness under 35 U.S.C. § 103. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1992). According to the Manual of Patent Examining Procedure, three criteria must be met in order for the Examiner to establish a *prima facie* case of obviousness. MPEP § 706.02(j). First, the Examiner must be able to show "some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." *Id.* Next, "there must be a reasonable expectation of success." *Id.* Finally, "the prior art reference (or references when combined) must teach or suggest all the claim limitations." *Id.*

The Examiner can satisfy this burden only by showing some objective teaching in the prior art or knowledge of one skilled in the art that would lead one to combine the teachings of the relevant references. *In re Fine*, 837 F.2d at 1074. Merely because references can be combined or modified does not render the resultant combination obvious unless the desirability of the combination is suggested in the prior art. MPEP § 2143.01 (citing *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990)). The Federal Circuit has required that "particular findings must

be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have these components for combination in the manner claimed.” *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000). Additionally, identification of each claimed part in the prior art is insufficient to defeat patentability of the whole claimed invention. *Id.* An element-by-element or limitation-by-limitation analysis of claims by picking and choosing claim elements or limitations from at least one piece of prior art is insufficient to establish obviousness without clearly pointing out a teaching or motivation to combine each of the elements in the references. *In re Dembiczak*, 175 F.3d 994, 1000 (Fed. Cir. 1999). Moreover, “whether a particular combination might be “obvious to try” is not a legitimate test of patentability.” *In re Fine*, 837 F.2d at 1075.

a. There is No Motivation For Combining Kovacs and Takada et al. Because Combining Them Impermissibly Changes the Principle Operation of Those References

In the present application, the Examiner has chosen aspects of Kovacs to be combined with aspects of Takada et al. on a limitation-by-limitation basis, but the Examiner fails to provide a teaching or showing that one of ordinary skill in the art would know or be prompted to make such a combination. Applicants submit that one of ordinary skill in the art would not be motivated to combine the teachings of Kovacs with those of Takada et al. because the combination would result in something that eliminates required features of one or both of the references. A combination that changes the principle of operation of the allegedly invalidating references is not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 813 (CCPA 1959); see also *In re Fritch*, 972 F.2d 1260, 1265 n.12 (Fed. Cir. 1992); *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984); MPEP § 2143.01. Here, Kovacs specifically discloses certain important engine features that are drastically different from those in Takada et al. For example, Kovacs requires that “the engine is built with an inlet and outlet *in the cylinder head*” (Tab B, p. 2). Further, Kovacs requires two inlet openings (Tab B, p. 2), the second being in the cylinder center (Tab B, p. 2). By comparison, Takada et al. requires that the inlet and outlet valves as well as the mechanism for operating the valves be “provided above the cylinder

head" (Tab C, p. 2). Thus, the structures of Kovacs and Takada et al. are not compatible and any combination of the two would significantly alter the structure disclosed by each of those references. In such a situation, the combination is improper and cannot establish a *prima facie* case of obviousness. *In re Ratti*, 270 F.2d at 813; see also *In re Fritch*, 972 F.2d at 1265 n.12; *In re Gordon*, 733 F.2d at 902; MPEP § 2143.01.

b. Examiner Provides No Teaching or Showing that There Would Be a "Reasonable Expectation of Success" in Combining Kovacs and Takada et al.

There also is no teaching in Takada et al. as to how the disclosed lubrication system is capable of being adapted to be incorporated into different engines, let alone the engine disclosed in Kovacs. Without further teaching, it would not be obvious to one skilled in the art to combine the lubrication apparatus of Takada et al. with the four-cycle engine of Kovacs. Indeed, their incompatibility supports that one of ordinary skill in the art would not be motivated to make this combination as there would not "be a reasonable expectation of success." MPEP § 706.02(j). This is especially the case in this situation where the combination would destroy prior art references. Hence, the Examiner has failed to provide a *prima facie* case of obviousness as required in the Manual of Patent Examining Procedure § 2143. Therefore, Applicants submit that Claims 8-19 are patentable over the prior art, and that the present apparatus is not an obvious combination of Takada et al. and Kovacs references.

2. Examiner's Reliance on an Unclaimed Feature Does not Provide Motivation to Combine References

With respect to Claims 8-13, these claims in the present form were originally allowed by the Examiner in the Notice of Allowability dated August 11, 2004 (Tab D). [The Kovacs reference that the Examiner is now asserting against the claims of the present application was originally submitted in an Information Disclosure Statement and corresponding Form PTO-1449 accompanying the originally-filed application. The Notice of Allowability dated August 11, 2004 did not include the initialed Form PTO-1449 indicating that any of the references submitted by the Applicants had been considered by the Examiner. The issue

fee payment was due November 12, 2004, as indicated on the Notice of Allowability. The Examiner eventually considered the references submitted by the Applicants with the original application and disclosure and mailed a second Supplemental Notice of Allowability on November 4, 2004 (Tab E), one week before the issue fee payment was due. In this second Supplemental Notice of Allowability, the Examiner indicated that Claims 8-13 remained allowed in view of each piece of art submitted by the Applicants, which included the Kovacs reference.

The Kovacs reference was submitted and considered by the Examiner when the second Supplemental Notice of Allowability was mailed, and Claims 8-13 remained allowed. The Takada et al. reference that the Examiner is using in combination with the Kovacs reference to reject these claims was submitted with the Applicants' Request for Continued Examination (Tab F). As indicated in the final Office Action dated April 14, 2005 (Tab G), the Examiner admits that Kovacs "does not show a clear reduction to practice of a hand-held 4-cycle engine," but then states that "one of ordinary skill in the art would clearly understand that construction would involve merely miniaturization." The Examiner continues, stating that "Kovacs fails to disclose details of a lubrication system; therefore, one of ordinary skill in the art would be motivated to use the system of Takada et al for the advantages listed therein." Thus, the Examiner is combining the Kovacs reference, over which the Examiner has previously granted allowance of Claims 8-13, with Takada et al. for which the Examiner contends discloses a lubrication system in order to reject Claims 8-13.

However, independent Claim 8 does not require a lubrication system, thus making the Takada et al. an inappropriately applied reference. Instead, Claim 8 requires a frame, a handle, an implement, and a lightweight, four-cycle engine. While the Examiner is adamant that such a lubrication system would be required in such an engine, a lubrication system is not a required element of Claim 8, and to read such a limitation into Claim 8 is inappropriate. The Examiner points to no specific structural elements in the Takada et al. reference that are likewise recited in Claim 8 of the present application. Thus, the

Examiner erred in applying the Takada et al. reference to teach a lubrication system when no lubrication system is being claimed in Claim 8.

Moreover, even if a lubrication system was required, the Examiner provides no further explanation of how the combination of the lubrication system taught in Takada et al. can be combined with Kovacs to teach the portable power tool having a four-cycle engine or even that one of ordinary skill in the art would believe that they could be combined. Therefore, Applicants contend that Claim 8 remains in condition for allowance as previously determined by the Examiner because the Examiner's attempt to reject Claim 8 by combining a reference that teaches an unclaimed aspect with a reference that the Examiner has already recognized as being insufficient to teach the claimed invention is inappropriate. Applicants also assert that Claims 9-13 remain in condition for allowance for the same reasons as Claim 8 from which they depend.

3. There is No Motivation to Combine Kovacs and Takada Because the Advantage of the Takada Lubrication System Is Already Found in Kovacs

In addition to relying on an unclaimed feature, there is no need to combine the lubrication system of Takada into the Kovacs engine because the alleged benefit of the unclaimed lubrication system is already present in Kovacs. The engine disclosed by the Kovacs reference is directed to a four-cycle engine that includes a cylinder head having an inlet and outlet port located in the cylinder head and an inlet and outlet port located in the cylinder center. The Kovacs reference expressly states that "[t]he aim of the invention is to render the two-stroke engine uneconomical, firstly because the two-stroke engine has to be operated with mixture (petrol + oil)" (English translation) (Tab C, p. 3). Hence, Kovacs recognizes that a lubrication system located external from the combustion cylinder is necessary in order to allow for cleaner combustion as well as fuel savings. Contrary to the Examiner's position, Kovacs does teach a lubrication system for the four-cycle engine. The Takada et al. reference is directed to a lubrication system in which a rocker arm located above the combustion chamber is used to control the opening and closing of the inlet and outlet ports at the top of the cylinder head. The oil is transported to a rocker arm

chamber above the combustion chamber by way of an oil supply path and a return path, wherein the change in pressure in the crank chamber. The advantage taught by the Takada et al. reference is that "oil consumption can be reduce[d], while undesirable white smoke can be eliminated, even if the engine is inclined" (English translation) (Tab C, p. 7). This is the exact same benefit that already exists in Kovacs. There is simply no need to combine Kovacs and Takada.

Moreover, even if a lubrication system was required, the Examiner provides no further explanation of how the combination of the lubrication system taught in Takada et al. can be combined with Kovacs to teach the portable power tool having a four-cycle engine or even that one of ordinary skill in the art would believe that they could be combined. Therefore, Applicants contend that Claim 8 remains in condition for allowance as previously determined by the Examiner because the Examiner's attempt to reject Claim 8 by combining a reference that teaches an unclaimed aspect with a reference that the Examiner has already recognized as being insufficient to teach the claimed invention is inappropriate. Applicants also assert that Claims 9-13 remain in condition for allowance for the same reasons as Claim 8 from which they depend.

4. Examiner's Conclusion Regarding Miniaturizing the Combination of Kovacs and Takada are Improper and Unsupported

Finally, in addition to relying on an unclaimed and unneeded feature as motivation to make the Kovacs/Takada combination, the Examiner then completes the rejection of Claims 8-19 of the present application by arguing that it would have been obvious to one of ordinary skill in the art to merely miniaturize the combination of Kovacs and Takada et al. The Examiner further asserts that the reason miniaturization was never done previous to Applicants' application was only a matter of expense. However, the Examiner's purported reasoning that miniaturization was not done prior to Applicants' invention because of expense, and not technology, is not supported. The Examiner's conclusory statements by themselves are insufficient to amount to "evidence" of a motivation to combine references. *In re Kotzab*, 217 F.3d at 1370.

Contrary to the Examiner's reasoning, the scientific community recognized that miniaturization alone would not accomplish what Applicants have invented. For example, the 1993 Popular Science article titled *The Little Engine That Could* states that to characterize Ryobi's four-cycle engine as "just miniaturizing" is "an underestimate of the cleverness of the Ryobi engine design." (Tab H, p. 92).³ Additionally, "[s]uch dramatic downsizing required smaller components; some parts, such as the valves didn't exist and had to be designed and manufactured specifically for this engine." (Tab H, p. 92). The Examiner's contention that simply miniaturizing the combination of the four-cycle engine of Kovacs and combining it and the lubrication system of Takada et al. is inapposite in view of the findings of this article. Neither Kovacs nor Takada et al. disclosed a manner in which to miniaturize the two systems, and as the article indicates, such a combination was not as simple as the Examiner contends. The Examiner has not provided a teaching or motivation to combine Takada et al. and Kovacs. Such a combination and the further miniaturization of that combination is mere speculation that is made with the benefit of hindsight only, which is improper. *In re Warner*, 379 F.2d 1011, 1017 (C.C.P.A. 1967) (stating that "[a] rejection based on section 103 clearly must rest on a factual basis... [the Patent Office] may not, because it may doubt that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis.); see also *In re Fritch*, 972 F.2d at 1266. Thus, the Examiner has not provided a *prima facie* case of obviousness by merely asserting that it would have been obvious to one of ordinary skill in the art to miniaturize the combination of Takada et al. and Kovacs. Therefore, Applicants submit that Claims 8-19 are patentable over the prior art, and that the present apparatus is not an obvious combination of Takada et al. and Kovacs.

Further, there is no showing that the mere miniaturization of either the engine of Kovacs or the lubrication system of Takada et al. will necessarily result in a properly working engine for use on a portable, hand-held power tool.

³ This article refers to Ryobi because the parent application was originally assigned to Ryobi. Ryobi has since transferred all of its rights to MTD Southwest, Inc.


Without a showing that mere miniaturization would accomplish that which is taught in Claims 8-19 the Examiner's contention simply amounts to speculation. *In re Fritch*, 972 F.2d at 1265-66 (stating that the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious to one skilled in the art unless the prior art suggested the desirability of the modification). There is no teaching as to how the four-cycle engine taught in Kovacs or the lubrication system taught in Takada et al. can be miniaturized to provide a reduction in weight and size of an engine in order to be used with a hand-held tool.

In view of the foregoing comments, Applicants respectfully submit that Claims 8-19 are patentable over Kovacs in view of Takada et al., and the claims are in a condition ready for allowance.

VIII. CONCLUSION

The cited references, either alone or in combination with the Examiner's assertions, do not provide a valid basis for a *prima facie* obviousness rejection of the present claims. Accordingly, Appellants submit that the present invention is fully patentable over Kovacs and Takada et al. and the Examiner's rejection should be REVERSED.

Respectfully submitted,


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IX. CLAIMS APPENDIX

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Previously Presented) A hand-held, portable, power tool adapted to be carried by an operator while in use, comprising:

a frame, including a handle engageable by an operator;

an implement cooperating with the frame and having a rotary-driven input member;

a lightweight, four-stroke cycle, internal combustion, spark-ignition engine attached to said frame wherein said engine comprising:

a lightweight engine block defining a cylinder head assembly, a cam housing, a crank chamber and a cylindrical bore;

an intake valve and exhaust valve in said cylinder head assembly;

a piston slidably disposed in said cylindrical bore;

a crankshaft supported by at least one bearing in said crank chamber, said crankshaft being drivably connected to said piston, and having an output end cooperating with an input end of said implement;

a cam rotatably mounted in said cam housing and driven by said crankshaft at less than the full speed of said crankshaft; and

a valve cover on said cylinder head defining a valve chamber.

9. (Previously Presented) The hand-held, portable, power tool of claim 8 wherein said tool is a line trimmer.

10. (Previously Presented) The hand-held, portable, power tool of claim 8 wherein said tool is a chain saw.

11. (Previously Presented) The hand-held, portable, power tool of claim 8 wherein said tool is a blower/vacuum.

12. (Previously Presented) The hand-held, portable, power tool of claim 8 wherein said engine further comprising:

an oil reservoir for storing engine lubrication oil; and

an engine lubrication system whereby said oil is circulated through said engine to lubricate said piston, said crankshaft, said bearing, said intake and exhaust valves, and said cam.

13. (Previously Presented) The hand-held, portable, power tool of claim 12 wherein said engine lubrication system comprising:

an oil flow passage such that said oil reservoir, said cylindrical bore, said crankshaft chamber, said cam chamber and said valve chamber are in fluid communication; and

an oil return passage from said valve chamber to said oil reservoir.

14. (Previously Presented) A hand-held, portable, power tool adapted to be carried by an operator while in use, comprising:

a frame, including a handle engageable by an operator;

an implement cooperating with the frame and having a rotary-driven input member;

a lightweight, four-stroke cycle, internal combustion, spark-ignition engine attached to said frame wherein said engine comprising:

a lightweight engine block defining a cam housing, a crank chamber and a cylindrical bore;
an intake valve and exhaust valve;
a piston slidably disposed in said cylindrical bore;
a crankshaft supported by at least one bearing in said crank chamber, said crankshaft being drivably connected to said piston, and having an output end cooperating with an input end of said implement;
a cam rotatably mounted in said cam housing and driven by said crankshaft at less than the full speed of said crankshaft.

15. (Previously Presented) The hand-held, portable, power tool of claim 14 wherein said tool is a line trimmer.

16. (Previously Presented) The hand-held, portable, power tool of claim 14 wherein said tool is a chain saw.

17. (Previously Presented) The hand-held, portable, power tool of claim 14 wherein said tool is a blower/vacuum.

18. (Previously Presented) The hand-held, portable, power tool of claim 14 wherein said engine further comprising:

an oil reservoir for storing engine lubrication oil; and
an engine lubrication system whereby said oil is circulated through said engine to lubricate said piston, said crankshaft, said bearing, said intake and exhaust valves, and said cam.

19. (Previously Presented) The hand-held, portable, power tool of claim 18 wherein said engine lubrication system comprising:

an oil flow passage such that said oil reservoir, said cylindrical bore, said crankshaft chamber, said cam chamber and said valve chamber are in fluid communication; and
an oil return passage from said valve chamber to said oil reservoir.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,924	09/19/2003	Robert G. Everts	10512/41	6463

757 7590 04/14/2005

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EXAMINER

KAMEN, NOAH P

ART UNIT	PAPER NUMBER
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3747

DATE MAILED: 04/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Sp

Office Action Summary	Application No. 10/666,924	Applicant(s) EVERTS ET AL.	
	Examiner Noah Kamen	Art Unit 3747	

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/31/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kovacs (DE 3335962) in view of Takada et al (JP 61-39416).

Kovacs proposes to use a four cycle engine for a chain saw. Takada et al disclose a four cycle engine comprising a cam 17, a valve cover 15 on the cylinder head, a splasher 23 that directs lubricant to the recited moving parts of the engine via oil passages 24, 25. Takada et al disclose that an advantage of the invention is a lubrication apparatus, which can lubricate the rocker arm chamber in a reliable and efficient manner with a simple and compact structure. Since this is important for a portable operator carried power tool, one of ordinary skill in the art would combine the engine of Takada with the tool of Kovacs.

Response to Arguments

Applicant's arguments, see the remarks on page 5, filed 3/31/05, with respect to Tuggle have been fully considered and are persuasive. The rejection of claims 14-19 based on Tuggle has been withdrawn.

Applicant's arguments filed 3/31/05 based on Kovacs and Takada have been fully considered but they are not persuasive. The applicants argue that Kovacs fails to explain how the disclosed engine could be used with a chain saw and that the engine is merely directed to an exhaust improvement; therefor the disclosure for use in a chainsaw is speculation.

Furthermore, there is no teaching/motivation to combine the lubrication system of Takada et al

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with Kovacs. That to combine the two references would result in an engine incapable of being hand-held/portable. The applicants assert that no hand-held 4-cycle engine was available anywhere else (see 1993 Popular Science, "The Little Engine That Could").

The examiner contends that while Kovacs does not show a clear reduction to practice of a hand-held 4-cycle engine, one of ordinary skill in the art would clearly understand that construction would involve merely miniaturization. The assertion that it had never been done before (at least on a commercial scale) is probably one of expense. Two-cycle engine have fewer parts than and easier to build. It is only with relatively new emission standards that the cost would become a secondary factor. Kovacs fails to disclose details of a lubrication system; therefor, one of ordinary skill in the art would be motivated to use the system of Takada et al for the advantages listed therein. Again, their combination would merely require miniaturization; albeit at a much greater expense. As previously mentioned, the fact that miniature 4-cycle engine had not existed before is deemed not an issue of technology, but one of expediency. Lastly, there are no limitations in the pending claims that deal with novel aspects on how to miniaturize the engine. The claims just recite "lightweight", "hand-held", "portable" with respect to KNOWN ENGINE CONSTRUCTION.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37


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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Noah Kamen whose telephone number is 571 272 4845. The examiner can normally be reached on M-Th 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Yuen can be reached on 571 272 4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Noah Kamen
Primary Examiner
Art Unit 3747

nk